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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,356	09/28/2001	Yojiro Matsueda	110733	2251
25944	7590	03/30/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			CHANG, KENT WU	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,356

Applicant(s)

MATSUEDA, YOJIRO

Examiner

Kent Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-26, 29-43 and 47-65 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 27, 28, 44-46, 66 and 67 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7.11.12.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12/21/01, 12/03/03, and 12/16/03 are in compliance with the provisions of 37 CFR 1.97 and all of the references listed in the IDS have been considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 19, 20, are rejected under 35 U.S.C. 102(b) as being anticipated by Youn (US Patent No. 5,856,816).

Youn teaches a LCD driving circuit comprising: a plurality of data lines and scan lines which are arranged in a matrix manner; electro-optical elements which are disposed correspondingly to intersections of the data lines and the scan lines; a data line driving circuit (2a) capable of driving the data lines; and an auxiliary data line driving circuit (2b) capable of driving the data lines separately from the data line driving circuit (column 1 line 34 to column 2 line 25 and Figures 2-3). The driving circuit of Youn includes a decoder (internal

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decoder in 13, see column 2 lines 16-17), a shifter register (11), a latch circuit (12, 13), a D/A converter (15).

4. Claims 1, 2, 7, 10, 11, 14, 15, 20, 21, are rejected under 35 U.S.C. 102(b) as being anticipated by Shimada (US Patent No. 5,394,166).

Shimada teaches a LCD driving circuit comprising: a plurality of data lines and scan lines which are arranged in a matrix manner; electro-optical elements which are disposed correspondingly to intersections of the data lines and the scan lines; a data line driving circuit (element 92 in Figure 9) capable of driving the data lines; and an auxiliary data line driving circuit (the driver for driving upper left corner of the screen as shown in Fig. 12-2B) capable of driving the data lines separately from the data line driving circuit (see column 7 line 57-66).

Consider claims 10 and 15. Shimada teaches a full-dot display mode and a character display mode (for character or note, see column 4 lines 31-35) can be switched so that the data line driving circuit is enabled when the full-dot display mode is selected and the auxiliary data line driving circuit is enabled when the character display mode is selected.

Consider claims 11 and 14. The device of Shimada comprises a scan line driving circuit capable of driving the scan lines, and an auxiliary scan line driving circuit capable of driving the scan lines separately from the scan line driving circuit, wherein all of the scan lines are connected to the scan line driving circuit, and only a portion of the scan lines is selectively connected to the auxiliary scan

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line driving circuit (the driver for driving upper left corner of the screen as shown in Fig.12-2B).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12, 13, 16, 17, 18, 22-26, 29-43, 47-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada (US Patent No. 5,394,166) in view of Youn (US Patent No. 5,856,816).

Shimada teaches a LCD driving circuit comprising: a plurality of data lines and scan lines which are arranged in a matrix manner; electro-optical elements which are disposed correspondingly to intersections of the data lines and the scan lines; a data line driving circuit (element 92 in Figure9) capable of driving the data lines; and an auxiliary data line driving circuit (the driver for driving upper left corner of the screen as shown in Fig.12-2B) capable of driving the data lines separately from the data line driving circuit (see column 7 line 57-66).

Youn further teaches a LCD driving circuit comprising: a plurality of data lines and scan lines which are arranged in a matrix manner; electro-optical elements which are disposed correspondingly to intersections of the data lines and the scan lines; a data line driving circuit (2a) capable of driving the data

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lines; and an auxiliary data line driving circuit (2b) capable of driving the data lines separately from the data line driving circuit (column 1 line 34 to column 2 line 25 and Figures 2-3). The driving circuit of Youn includes a decoder (internal decoder in 13, see column 2 lines 16-17), a shifter register (11), a latch circuit (12, 13), a D/A converter (15).

Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to use a decoder, a shifter register, a latch circuit, a D/A converter as taught by Youn in the device of Shimada so as to provide a driver for the LCD at a low cost and readily available in the market.

Consider claim 16. The examiner takes Official Notice that it is well known in the art to use smaller number of grayscale levels or monochromatic for character display and full color for graphic or moving image. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to use smaller number of grayscale levels or monochromatic for character display and full color for graphic or moving image so as to speed up the operating speed of the system and reduce flickers in the moving image.

Consider claim 17. Shimada teaches to use lower frequency in driving a partial screen.

Consider claim 18. The device of Shimada obviously needs to reset all pixels while switching between the two modes so as to eliminate interference between the current image frame and the previous image frame.

Consider claims 29. Shimada teaches a full-dot display mode and a character display mode (for character or note, see column 4 lines 31-35) can be

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switched so that the data line driving circuit is enabled when the full-dot display mode is selected and the auxiliary data line driving circuit is enabled when the character display mode is selected.

Consider claims 30. The device of Shimada comprises a scan line driving circuit capable of driving the scan lines, and an auxiliary scan line driving circuit capable of driving the scan lines separately from the scan line driving circuit, wherein all of the scan lines are connected to the scan line driving circuit, and only a portion of the scan lines is selectively connected to the auxiliary scan line driving circuit (the driver for driving upper left corner of the screen as shown in Fig.12-2B).

Consider claims 39 and 40. It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the method of Shimada as modified for driving all types of panel display including EL panel since the system of Shimada functions equally well with all kinds panel display in reducing power consumption as suggested by Shimada.

All other claims reciting the same limitations are rejected similar to the claims above.

Allowable Subject Matter

7. Claims 8, 9, 27, 28, 44-46, 66, 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach a LCD driving circuit comprising: a plurality of data lines and scan lines which are arranged in a matrix manner; electro-optical elements which are disposed correspondingly to intersections of the data lines and the scan lines; a data line driving circuit capable of driving the data lines; and an auxiliary data line driving circuit capable of driving the data lines separately from the data line driving circuit, wherein three dots consisting of an electro-optical element capable of emitting red, an electro-optical element capable of emitting green, and an electro-optical element capable of emitting blue constitute one pixel to enable a color display, and only a data line corresponding to a particular color of the three colors is selectively connected to the auxiliary data line driving circuit as recited in the claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Castleberry (US Patent No. 4,688,896) teaches a device having main data lines and auxiliary data lines.

Matsumoto teaches to use smaller number of grayscale levels or monochromatic for character display and full color for graphic or moving image (column 6 lines 54-64).

Rader (US Patent No. 5,867,140) and Nomura (US Patent No. 5,881,299) teach a LCD having two areas, wherein the two areas having separate drivers.

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Maeda et al (US Patent No. 6,091,389) and Yuki (US Patent No. 5,905,483) teach systems having partial rewriting.

Alt (US Patent No. 6,697,037) teaches using two data drivers.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Chang whose telephone number is 703-305-4824. The examiner can normally be reached on Monday to Thursday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at 703-305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

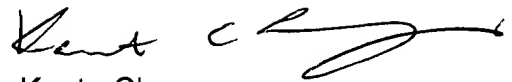
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 305-9700.

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A handwritten signature in black ink, appearing to read "Kent Chang", with a long horizontal flourish extending to the right.

Kent Chang
Primary Examiner
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Kc

3/19/04